

# ASTM International Committee E56 on Nanotechnology

## Standards Update for 2013

E56 on Nanotechnology



<http://www.astm.org/COMMIT/COMMITTEE/E56.htm>

Debra L. Kaiser  
Material Measurement Laboratory, NIST  
Chair, Committee E56

*Next Meeting: May 5-6, 2014, Toronto, Canada*

ANSI–Nanotechnology Standards Panel Webinar  
December 5, 2013

# ASTM E56

## Overview

- Established in 2005
- Membership: 171 individuals and organizations
- 22 countries represented in membership
- Committee meets twice yearly (May and November)
- Focus is on standards for measurements of nanomaterials



## Scope

- Develop standards and guidance for nanotechnology and nanomaterials
- Coordinate with existing ASTM standardization efforts of other ASTM committees as they relate to nanotechnology
- Maintain appropriate global liaison relationships with activities (internal and external) related to this subject area
- Participate in the development of symposia, workshops, and other related activities to enhance the development of standards



# E56 Organization

Chair: *Debra Kaiser* (NIST)

Vice-Chair: *Stacey Harper* (Oregon State)

ASTM Staff Manager: *Kate McClung*

Membership Secretary: *Tony Thornton* (Micromeritics)

Secretary: *Aleksandr Stefaniak* (NIOSH)

## Technical Subcommittees

**E56.01**

Informatics and  
Terminology

**E56.02**

Physical and Chemical  
Characterization

**E56.03**

Environment,  
Health, and Safety

**E56.06**

Nano-enabled  
Consumer Products

**E56.90**

Executive

**E56.04**

Intellectual Property  
Issues

**E56.05**

Liaison and International  
Cooperation

**E56.91**

Strategic Planning  
and Review

## Advisory Subcommittees

# Types of ASTM Standards

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- **Terminology standard:** a document composed of definitions of terms; explanations of symbols, abbreviations, or acronyms (1)\*
  - **Guide:** a compendium of information or series of options that does not recommend a specific course of action (6)
  - **Practice:** a definitive set of instructions for performing one or more specific operations that does not produce a test result (1)
  - **Test method:** a definitive procedure that produces a test result; requires an interlaboratory study (4)
  - **Specification:** an explicit set of requirements to be satisfied by a material, product, system, or service
  - **Classification:** a systematic arrangement or division of materials, products, systems, or services into groups based on similar characteristics such as origin, composition, properties, or use
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- **Interlaboratory study:** conducted to develop precision and bias statements
    - **Precision:** closeness of agreement between test results obtained under prescribed conditions; includes repeatability and reproducibility standard deviations
    - **Bias:** systematic error that contributes to the difference between the mean of a large number of test results and an accepted reference value

\* Denotes number of E56 published standards of that type

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# New Published Standards and Reapproved Standards in 2013

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## Subcommittee E56.01: *Informatics and Terminology*

- **E909-13** Standard Guide for Investigation/Study/Assay Tab-Delimited Format for Nanotechnologies (ISA-TAB-Nano): [Standard File Format](#) for the Submission and Exchange of Data on Nanomaterials and Characterizations
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## Subcommittee E56.02: *Physical and Chemical Characterization*

- **E2864-13** Standard Test Method for Measurement of Airborne Metal and Metal Oxide Nanoparticle [Surface Area Concentration](#) in Inhalation Exposure Chambers Using Krypton Gas Adsorption
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## Subcommittee E56.03 : *Environment, Health, and Safety*

- **E2535-07 (2013)** Standard Guide for [Handling Unbound Engineered Nanoscale Particles](#) in Occupational Settings
  - **E2524-08 (2013)** Standard Test Method for Analysis of [Hemolytic Properties](#) of Nanoparticles
  - **E2525-08 (2013)** Standard Test Method for Evaluation of the Effect of Nanoparticulate Materials on the [Formation of Mouse Granulocyte-Macrophage Colonies](#)
  - **E2526-08 (2013)** Standard Test Method for Evaluation of [Cytotoxicity](#) of Nanoparticulate Materials in Porcine Kidney Cells and Human Hepatocarcinoma Cells
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# Proposed New Standards

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## Subcommittee E56.02: *Physical and Chemical Characterization*

- **WK39049** New Guide for [Sample Preparation](#) of Charge-Stabilized Metal Nanoparticles for [Electron Microscopy](#)\*
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## Subcommittee E56.03: *Environment, Health, and Safety*

- **WK34427** New Guide for Nanotechnology Environment, Health, and Safety (EHS) [Education and Training](#)
  - **WK38731** New Specification for ASTM Nanotechnology Environment, Health and Safety [Personnel Certification Program](#)
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## Subcommittee E56.06: *Nano-Enabled Consumer Products*

- **WK37636** New Guide for [Detection and Characterization](#) of Manufactured Silver Nanomaterials in Textiles\*
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## Subcommittee E56.91: *Strategic Planning and Review*

- **WK37514** New Guide for E56 and F04 Workshop on [Nanomaterials in Medicine](#): Research, Applications, Products, and Risk
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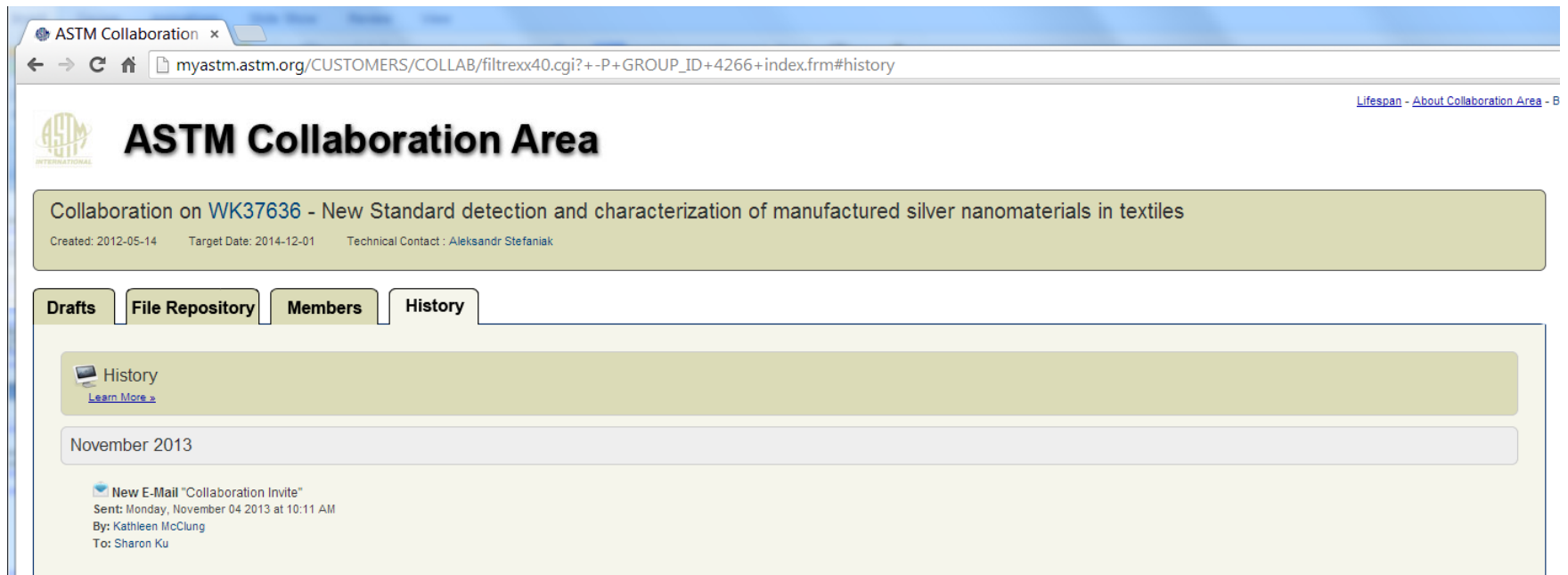
\*Collaboration area on ASTM website

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# Collaboration Areas

- Established as an interactive web tool to facilitate:
  - Development of new standards and review of existing standards
  - Discussions on specific topics related to standards
- Leader invites E56 members to join a collaboration area; members can also request to join

## Example of a collaboration area website for development of a new standard



The screenshot shows a web browser window with the URL `myastm.astm.org/CUSTOMERS/COLLAB/filtrex40.cgi?+P+GROUP_ID+4266+index.frm#history`. The page title is "ASTM Collaboration Area". The main content area displays "Collaboration on WK37636 - New Standard detection and characterization of manufactured silver nanomaterials in textiles". Below this, there are tabs for "Drafts", "File Repository", "Members", and "History". The "History" tab is selected, showing a "History" section with a "Learn More" link. Below the history section, there is a "November 2013" section with a "New E-Mail 'Collaboration Invite'" notification. The notification details are: "Sent: Monday, November 04 2013 at 10:11 AM", "By: Kathleen McClung", and "To: Sharon Ku".

- Collaboration area includes drafts of standard, relevant files, list of members, history of member comments and actions
- Members can post new documents and comments on the area

# ASTM E56 Fall 2013 Meeting

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- FDA requested that E56 hold its Fall meeting at the FDA White Oaks Campus in Silver Spring, MD (May 2013)
- ASTM E56 Executive Committee approved the request
- Meeting held on October 30-31 with webinar capability for the entire meeting
- Agenda
  - FDA Welcome and Opening Presentations (Carlos Pena and Subhas Malghan)
  - Regular business meetings of all Subcommittees
  - FDA Nanotechnology Laboratory Tours
  - Guest speakers:
    - Heather Benko, ANSI: *“Update on ISO TC229”* and *“ANSI-NSP Nanotechnology Standards Database”*
    - Stephen Freiman, Freiman Consulting: *“A Uniform Description System for Nanomaterials”*
    - Connor Stone, Ohio State Univ.: *“Challenges of Standards Development for Nanotechnology”*
    - Alan Kennedy and Jessica Coleman, USACE ERD: *“Program on Developing Protocols for Nanomaterials”*
    - Ajit Jilla, NIST: *“Patents and Intellectual Property Management in Nanotechnology Standardization: A NIST Perspective”*
- 16 FDA participants in person
- Planning to hold a future E56 meeting at FDA, likely in Spring 2015